	Application No.	Applicant(s)
Notice of Allowability	09/838,449	AXELROD ET AL.
	Examiner	Art Unit	
	Thomas H. Stevens	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the amendments filed 9/18/06 & 12/22/2006.*

2. ☒ The allowed claim(s) is/are *1-7, 9-24, 26-40, 42-52, 54-57, 59 and 60.*

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date *9/18/06*

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☐ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____.

DETAILED ACTION

REASONS FOR ALLOWANCE

1.   This office action is in responsive to the paper filed on 12/22/2006.

2.   The following is an examiner's statement of reasons for allowance:

- The claimed invention is a method for creating evaluation model for
  speech recognition.

- The claimed method includes a limitation "determining confusability by
  using the inverse of the new matrix."

- The combination of prior art of record does not expressly disclose or
  suggest the "method" with the feature of "creating a new matrix by
  subtracting the matrix from an identity matrix, determining an inverse of
  the new matrix; and determining acoustic confusability by using the
  inverse of the new matrix. A method comprising the steps of: creating an
  evaluation model from a plurality of evaluation phones, each of the phones
  corresponding to a first word; creating a synthesizer model from a plurality
  of synthesizer phones, each of the phones corresponding to a second
  word; creating a product machine from the evaluation model and
  synthesizer model, the product machine comprising a plurality of
  transitions and a plurality of states; determining a matrix from the product
  machine;...a plurality of word pairs, wherein step further comprises the
  steps of, for each of the word pairs: determining an edit distance between

each word of the word pair; and determining acoustic confusability from the edit distance;... determining an edit distance between each word pair and an associated alignment; assigning acoustic distance to each aligned phoneme pair; and determining an acoustic confusability by summing acoustic distances..."the step of determining an acoustic perplexity by using the confusabilities...a step to create a new matrix by subtracting the matrix from an identity matrix, a step to determine an inverse of the new matrix; and a step to determine acoustic confusability by using the inverse of the new matrix."

- The references such as US Patent 5,230,037 teach a method comprising the steps of: creating an evaluation model from at least one evaluation phone; creating a synthesizer model from at least one synthesizer phone; and determining a matrix from the evaluation and synthesizer model; US Patent 4,707,858 teaches said matrix configured for speech recognition; an apparatus comprising: a memory that stores computer-readable code; and a processor operatively coupled to said memory, said processor configured to implement said computer-readable code, said computer-readable code configured to create an evaluation model from at least one evaluation phone; create a synthesizer model from at least one

synthesizer and determine a matrix from the evaluation and synthesizer

models; US Patent 5,806,029 teaches determining acoustic confusability

of the first word and the second word by using the matrix, said matrix

configured for speech recognition; a method for determining acoustic

confusability of a word pair, the method comprising the steps of; an article

of manufacture for determining acoustic confusability of a word pair, the

article of manufacture comprising: a computer-readable medium having

computer-readable code means embodied thereon, the computer-

readable program code means; US Patent 6,185,530 teaches determining

acoustic confusability and for each of a plurality of word pairs; and;

determining a metric by using the acoustic confusabilities, wherein step (b)

further comprises the step of determining an acoustic perplexity by using

the confusabilities; an article of manufacture comprising a computer-

readable medium having computer-readable code means embodied

thereon, an apparatus comprising: a memory that stores computer-

readable code; and a processor operatively coupled to said memory, said

processor configured to implement said computer-readable code, said

computer-readable code configured to: a) determine acoustic confusability

for each of a plurality of word pairs; and b) determine a metric by using the

acoustic confusabilities; US Patent 5,790,754 teaches an apparatus

comprising: a memory that stores computer-readable code; and a

processor operatively coupled to said memory, said processor configured

to implement said computer-readable code, said computer-readable code configured to: determining a matrix from the evaluation and synthesizer models; US Patent 4,707,858 teaches an article of manufacture comprising: a computer-readable medium having computer-readable code means embodied thereon, the computer-readable program code means comprising a step to creating an evaluation model from at least one evaluation phone; a step to creating a synthesizer model from at least one synthesizer phone. However, the references fail to teach creating a new matrix by subtracting the matrix from an identity matrix, determining an inverse of the new matrix; and determining acoustic confusability by using the inverse of the new matrix. A method comprising the steps of: creating an evaluation model from a plurality of evaluation phones, each of the phones corresponding to a first word; creating a synthesizer model from a plurality of synthesizer phones, each of the phones corresponding to a second word; creating a product machine from the evaluation model and synthesizer model, the product machine comprising a plurality of transitions and a plurality of states; determining a matrix from the product machine;...a plurality of word pairs, wherein step further comprises the steps of, for each of the word pairs: determining an edit distance between each word of the word pair; and determining acoustic confusability from the edit distance;... determining an edit distance between each word pair and an associated alignment; assigning acoustic distance to each aligned

phoneme pair; and determining an acoustic confusability by summing

acoustic distances...the step of determining an acoustic perplexity by

using the confusabilities...a step to create a new matrix by subtracting the

matrix from an identity matrix, a step to determine an inverse of the new

matrix; and a step to determine acoustic confusability by using the inverse

of the new matrix.

3.   Claims 8, 25,41,53 and 58 have been cancelled.

4.   Claims 1-7,9-24,26-40,42-52,54-57,59, and 60 are deemed allowable.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-

3715, Monday-Friday (7:00 am- 4:30 pm EST).

If attempts to reach the examiner by telephone are unsuccessful, please contact

examiner's supervisor Mr. Anthony Knight 571-272-3687. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov.. Answers to

questions regarding access to the Private PAIR system, contact the Electronic Business

Center (EBC) (toll-free (866-217-9197)).

Anthony Knight
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Tech Center 2100